Five Points to Explain why Maternal Mortality is the Canary in the Coal Mine for Women’s Health

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Addressing the Drivers of Maternal Mortality
Hart Senate Office Building
Washington, D.C.
June 27, 2019

Clarifying Definitions:
Pregnancy Associated Mortality

Pregnancy Associated Mortality (1 year)

All Deaths women of reproductive age pregnancy to 1 year ppm
Clarifying Definitions:
Pregnancy Related Mortality

Pregnancy Associated Mortality (1 year)

Pregnancy Related Mortality (1 year)

All Deaths women during pregnancy, birth and up to 1 year ppm & Related to the pregnancy

Clarifying Definitions:
Maternal Mortality

Pregnancy Associated Mortality (1 year)

Pregnancy Related Mortality (1 year)

Maternal Mortality (42 days)

All Deaths women during pregnancy, birth and up to 42 days ppm Related to the pregnancy
(1) The Persistence of Racial Disparities

**U.S. Infant & Maternal Mortality**

Black to White Ratios, 1915-2016

Source: NCHS. Maternal Mortality and Related Concepts. Vital & Health Statistics. Series 33; #3. & annual data reports. 1915-1960 data from NCHS. *Vital Statistics Rates In The United States 1940-1960*. NOTE: Shifts in measurement (e.g. not all states were part of registration system prior to 1933; infant race was based on race of the child until 1980 & then race of the mother post 1980) accounts for some of the variation over time.

(1) Manifestation of Racial Disparities

**Leading Underlying Causes of Pregnancy-Related Deaths, by Race-Ethnicity**

(2) Putting the Problem in Context

**U.S. MMR* Compared to Countries with 300,000+ births, 2014-15**

<table>
<thead>
<tr>
<th>Country</th>
<th>MMR Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy</td>
<td>4</td>
</tr>
<tr>
<td>Spain</td>
<td>5</td>
</tr>
<tr>
<td>Japan</td>
<td>5</td>
</tr>
<tr>
<td>Australia</td>
<td>6</td>
</tr>
<tr>
<td>Germany</td>
<td>6</td>
</tr>
<tr>
<td>Canada</td>
<td>7</td>
</tr>
<tr>
<td>France</td>
<td>8</td>
</tr>
<tr>
<td>U.K.</td>
<td>9</td>
</tr>
<tr>
<td>Korea</td>
<td>11</td>
</tr>
<tr>
<td>U.S.</td>
<td>15.9*</td>
</tr>
</tbody>
</table>

*Maternal Mortality* per 100,000 births; # 2015 Estimated U.S. average


**Racial Disparities (2011-15):**
- 12.8 white women
- 34.7 black women
- 9.5 Hispanic

*Maternal Mortality* per 100,000 births

(3) Moving to a Public Health Approach

Timing of Pregnancy Related Deaths

- 42-365 Days PPM: 11.7%
- 7-41 Days PPM: 21.4%
- 1-6 Days PPM: 18.6%
- Day of Delivery: 31.3%

Maternal deaths are a public health issue as much as a clinical care issue.


(3) Moving to a Public Health Approach


(3) Moving to a Public Health Approach
Leading Underlying Causes of Pregnancy-Related Deaths, by Timing of Death

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnant</td>
<td>7</td>
<td>7</td>
<td>5</td>
<td>20</td>
<td>20</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>w/in 42 Days</td>
<td>4</td>
<td>9</td>
<td>6</td>
<td>7</td>
<td>22</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>43Days-1 Year</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>


(4) Problem is Bigger than Maternal Mortality
Overall Deaths rates (per 100K), Females 25-34, by Race/Ethnicity, 2010-2016

Source: NCHS.CDC Wonder Online Database
### Top 10 Causes of Death for Women 25-34 in 2016

<table>
<thead>
<tr>
<th></th>
<th>Total Deaths</th>
<th>% of total</th>
<th>Rate per 100k</th>
<th>% Change in rate 2010-2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>All causes</td>
<td>17,359</td>
<td>100.0</td>
<td>78.6</td>
<td>22.8%</td>
</tr>
<tr>
<td>Accidents (unintentional inj.)</td>
<td>6,247</td>
<td>36.0</td>
<td>28.3</td>
<td>53.0%</td>
</tr>
<tr>
<td>Malignant neoplasms</td>
<td>1,966</td>
<td>11.3</td>
<td>8.9</td>
<td>-1.1%</td>
</tr>
<tr>
<td>Intentional self-harm (suicide)</td>
<td>1,479</td>
<td>8.5</td>
<td>6.7</td>
<td>26.4%</td>
</tr>
<tr>
<td>Diseases of heart</td>
<td>1,141</td>
<td>6.6</td>
<td>5.2</td>
<td>6.1%</td>
</tr>
<tr>
<td>Assault (homicide)</td>
<td>836</td>
<td>4.8</td>
<td>3.8</td>
<td>15.2%</td>
</tr>
<tr>
<td>Pregnancy, childbirth &amp; puerperium</td>
<td>472</td>
<td>2.7</td>
<td>2.1</td>
<td>16.7%</td>
</tr>
<tr>
<td>Chronic liver disease and cirrhosis</td>
<td>360</td>
<td>2.1</td>
<td>1.6</td>
<td>77.8%</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>336</td>
<td>1.9</td>
<td>1.5</td>
<td>15.4%</td>
</tr>
<tr>
<td>Cerebrovascular diseases</td>
<td>244</td>
<td>1.4</td>
<td>1.1</td>
<td>-8.3%</td>
</tr>
<tr>
<td>Septicemia</td>
<td>210</td>
<td>1.2</td>
<td>1.0</td>
<td>NA</td>
</tr>
<tr>
<td>All other causes (residual)</td>
<td>4,068</td>
<td>23.4</td>
<td>18.4</td>
<td>12.2%</td>
</tr>
</tbody>
</table>

(5) Focusing on Solutions

Keeping Women in the System

Source: Daw J. Health Affairs 2017; 36:598-606

(5) Medicaid Eligibility for Parent vs Pregnant Women in Non-Expansion States

Medicaid eligibility thresholds, 2019

**Four Policy Recommendations**

1. **Use Maternal Mortality Review Committees to explore pregnancy associated deaths** for causes and possible bases for prevention;

2. **Use linked datasets to examine women’s health through the lifecourse and identify critical moments (e.g. pregnancy?) where intervention might matter**;

3. **Fund a systematic process for listening to women tell us about their lives and experiences in pregnancy and beyond to craft sustainable solutions that are meaningful to them**.

4. **Craft policies that keep women of all ages within the health and social system to prevent problems that lead to pregnancy associated deaths**.

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**www.birthbythenumbers.org**

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